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Apical cells of Marsiliaceae.—"Contributions to the developmental history of the Marsiliaceae" is the rather broad title of a paper by SCHNEIDER,⁴⁵ dealing with the apical cell and its segmentation in the vegetative organs of this family. The first part deals with the main axis and the second part with the lateral organs derived from it, the leaf, branch, and root. The apical cell of the axis is so oriented that two segments are dorsal and one is ventral. Roots are derived from the ventral segments, while leaves and branches come from the dorsal. In the behavior of the apical cells and their segments *Marsilia* and *Pilularia* differ from each other only in minor particulars. The work, which seems to be quite accurate, confirms and extends somewhat the earlier work of JOHNSON.—CHARLES J. CHAMBERLAIN.

Anatomy of Salicornia.—Miss DEFRAINE⁴⁶ has investigated the anatomy of *Salicornia*, and among the results the following are noted. The succulent "cortex" covering the internodes is phylogenetically derived from the basally developed leaf-sheath of the pair of leaves of the node above. The evidence for this seems quite convincing. The small, fleshy cotyledons fuse to form a cotyledonary sheath to the hypocotyl, similar to the leaf-sheath of the vegetative shoot. The occurrence of every transition between spiral cells and stereids led to the conclusion that the two are homologous structures, the former functioning chiefly in water storage, the latter in mechanical support. A peculiar kind of secondary growth sets in early in both root and stem.—J. M. C.

Endogenous gemmae.—The formation of endogenous gemmae is reported in *Haplozia caespiticia* by BUCH.⁴⁷ From within a gemma mother cell, numbers of which develop on the swollen end of a stem, two to four gemmae are produced and set free by the bursting of the wall of the mother cell. Mucilage within the mother cell absorbs water, swells, and bursts the wall. Endogenous gemmae have heretofore been reported for two genera, first in *Aneura* by GOEBEL and later in *Metzgeria* by EVANS.—W. J. G. LAND.

⁴⁵ SCHNEIDER, FRITZ, Beiträge zur Entwicklungsgeschichte der Marsiliaceen. *Flora* 105:347-369. figs. 18. 1913.

⁴⁶ DEFRAINE, ETHEL, The anatomy of the genus *Salicornia*. *Jour. Linn. Soc. Bot.* 41:317-348. pls. 15, 16. 1913.

⁴⁷ BUCH, HANS, Über die Brutorgane der Lebermoose. 8vo. pp. ix+70. pls. 3. Helsingfors: J. Simelii Arvengars Boktryckeriaktiebolag. 1911.